WHAT IS CLAIMED IS:

1. A pulse oximeter apparatus comprising:

a pulse oximeter sensor having an output for providing a signal corresponding to a measured physiological characteristic;

a memory associated with the sensor and located external to a monitor which receives the sensor signal, said memory containing data relating to said sensor and containing a digital signature.

2. The apparatus of claim 1 wherein said signature is signed using a private key, said signature being verifiable with a public key in the monitor.

3. The apparatus of claim 1 wherein said signature is a Rabin-Williams signature, an RSA signature, a Diffie-Hellman signature, an El Gamal signature, or an elliptic curve signature.

4. The apparatus of claim 1 wherein at least a first portion of said data is contained within said digital signature.

5. A method for creating a digital signature in a pulse oximeter apparatus including a memory associated with a pulse oximeter sensor having an output for providing a signal corresponding to a measured physiological characteristic, said method comprising:

signing at least a portion of said data relating to said sensor to create a digital signature;

storing said digital signature in said memory; and

storing data relating to said sensor in said memory.

6. The method of claim 5 further comprising:

creating a public key and private key pair;

imbedding said public key in a memory in a sensor reader; and

using said private key to sign said data and create said digital signature.

7. The method of claim 5 wherein said digital signature is a Rabin-Williams signature, an RSA signature, a Diffie-Hellman signature, an El Gamal signature, or an elliptic curve signature.

8. The method of claim 5 further comprising imbedding at least a portion of said data in said digital signature.

9. A pulse oximeter sensor reader comprising:

a housing;

a sensor input for receiving a signal from a pulse oximeter sensor corresponding to a measured physiological characteristic;

a sensor processing circuit coupled to said sensor input;

a memory input for receiving digital data stored in a memory associated with said sensor, said digital data including a digital signature;

a first sensor reader memory coupled to said memory input for storing said digital data;

a second sensor reader memory storing a signature verification key;

a third sensor reader memory storing a program for verifying the digital signature of said digital data using said signature verification key; and

a transfer circuit for providing at least a portion of said digital data to said sensor processing circuit.

10. The sensor reader of claim 9 wherein said first and second sensor reader memories are different portions of the same physical memory.

11. The sensor reader of claim 9 wherein said sensor processing circuit comprises a microprocessor.

12. The sensor reader of claim 9 wherein said signature verification key is a public key of a private key and public key pair.

13. The sensor reader of claim 9 wherein said signature is a Rabin-Williams signature.

14. The sensor reader of claim 9 wherein at least a portion of said digital data is imbedded in said digital signature.

15. A pulse oximeter system comprising:

(a) a pulse oximeter sensor apparatus including

a sensor, said sensor having an output for providing a signal corresponding to a measured physiological characteristic, and

a sensor memory associated with said sensor, said sensor memory having digital data relating to said sensor and having a digital signature, said digital signature being a signature of at least a portion of said data; and

(b) a pulse oximeter sensor reader including

a sensor reader housing;

a sensor input for receiving said signal from said sensor corresponding to a measured physiological characteristic;

a sensor processing circuit coupled to said sensor input;

a memory input for receiving said digital data from said sensor memory;

a first sensor reader memory coupled to said memory input for storing said digital data;

a second sensor reader memory storing a signature verification key; and

a third sensor reader memory storing a program for verifying said digital signature using said signature verification key.

16. The apparatus of claim 1 wherein said memory associated with said sensor is mounted in an adapter coupled between said sensor and said monitor.

17. The method of claim 5 wherein said memory associated with said sensor is mounted in an adapter coupled between said sensor and a monitor.

18. The system of claim 15 wherein said memory associated with said sensor is mounted in an adapter coupled between said sensor and said sensor reader.

19. A pulse oximeter apparatus comprising:

a sensor having an output for providing a sensor signal corresponding to a measured physiological characteristic; and

an adapter coupled to said sensor, said adapter including a memory, said memory containing sensor data and containing a digital signature.

20. The apparatus of claim 19 further comprising:

an internal monitor in said adapter for providing an output signal corresponding to said physiological characteristic; and

a conditioning circuit for modifying said sensor signal to produce a synthetic sensor signal, such that a second, external monitor using said synthetic sensor signal will produce an output corresponding to said output signal of said internal monitor.